

## **The Study of Mandelshtam–Brillouin Scattering in Csilol Isomers Solutions**

Sh. Faizullaev  
*Samarkand State University*  
*Univ.bld.15*  
*703004 Samarkand, Uzbekistan*

References 1-3 present studies of Mandelshtam–Brillouin light scattering in disubstituted benzenes. However, similar studies for binary solutions of disubstituted benzene were not sufficiently made. These studies may provide important findings about relaxation processes at high frequencies. For determination of the relaxation time, it is necessary to know the low-frequency as well as the high-frequency meaning of sound wave absorption coefficients in liquids and solutions. For the purpose of determining the hypersound absorption coefficient, we defined the widths of Mandelshtam–Brillouin components on the assumption that the true value of scattering line shape is dispersive and calculations on IBM spectra were imposed with the apparatus function and the obtained results are compared with the observed line. The program makes it possible to calculate by variation the contour true width until it shows good agreement with experimental contour.

By the shift of Mandelshtam–Brillouin components, the velocity of hypersound waves in the studied solutions was determined. The obtained results showed for the studied solutions an observed positive dispersion of sound velocity.

Values of acoustic relaxation times for solutions are significantly larger than for pure liquids, which indicates a strengthening of intermolecular interactions in going from pure liquids to solutions.

- [1] M.I. Shahparonov, V.A. Parzyan, A.Ya. Prihodko, and A.K. Karshibaev, *Vestnik. MSU*, 526 (Russian) (1975).
- [2] Sh. F. Faizullaev, A. Parpiev, A. Artikov, and O.I. Zinoviev In proc. "Acoustic Spectroscopy. Quantum Acoustics. Acoustoelectronics." Tashkent, Fan.. 103-105. (Russian) (1978).
- [3] Sh. F. Faizullaev, S.A. Osmanov, and B.S. Osmanov, In. proc. "The Study on Theoretic and Experimental Physics." Samarkand. 167-173. (Russian) (1977).